The WildTech Experience: a Playful Installation for Walking Through the Outcomes of a One-Month Backpacking Study

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ABSTRACT

Here we present a playful installation that will allow DIS attendees to (literally) walk through the data produced during a situated design research study where we explored how to design technology for joyful and caring human-nature interactions. Our study unfolded as a one-month backpacking adventure where a researcher engaged 200+ backpackers from 35+ nationalities. While hiking, the researcher co-experienced the nature with other nature-goers, facilitated discussions on the human-nature-technology interplay, and co-imagined how future innovations might make that interplay more joyful and caring. He documented those radically situated engagements in different ways, including quick drawings and short writings, a reflexive notebook, Instagram stories, or photos and videos, among others. Our installation will allow DIS attendees to navigate those data in a way that is both playful, situated, and inspirational – putting themselves into the researcher's boots and getting a more intimate sense of both how the study felt and what it yielded.

CCS CONCEPTS

• **Human-centered computing** → Interaction design; Empirical studies in interaction design.

KEYWORDS

Nature, in-the-wild, from-the-wild, interaction design, human-forest interaction, situated design, open data, data visualization

1 INTRODUCTION

The ongoing advances in embedded computing open exciting opportunities for novel technology-mediated experiences in areas of human life that have traditionally been perceived as non-technological. One such domain are our experiences within the nature. More and more, we allow digital affordances to permeate our forestry interactions: we use apps like *Wikiloc* [18] to stay on track, we share photos on social media, we wear gadgets to measure our performance (e.g. the *Fitbit* [1]), or we play forest-based games like *geocaching* [16], among others. Supporting rich human-nature interactions is a relevant concern for the HCI community given the wellbeing effects associated with them: experiencing nature is known to be restorative [13] and socio-culturally important [11], and there is a consensus that "total exposure is important, all forms and quantities are helpful, and the greener the better" [15]. Importantly, research also shows that current tech might be contributing [8] to a decrease in the time people spend in the forest [14]. We thus see a need to explore how tech might support tighter human-nature interactions that are caring, mindful, and experientially rich.

When thinking about the human-nature interplay, one may wonder: why should we bring technology into the nature in the first place? Recent research has discussed the potential of tech to respond to people's socio-emotional [3], bodily [12], and otherwise experiential needs [5]. We see an opportunity for exploring how those affordances may add value within the nature, and how might we target them by design. To tackle that opportunity and craft technologies that truly respond to the needs of both people and the environment, we suggest we need to take a situated approach [10] that ensures our new developments reflect (rather than disrupt) the idiosyncrasy of the nature activities and scenarios they aim to enhance. As recent design methods research begins to indicate [1, 4], that may require displacing design into the *real* wild – that is, striving to envision the future of the human-nature-technology interplay from the forest itself.

Our work is committed to that principle: we have a design research agenda of exploring how technology might contribute to enriching the experiential texture of human-nature interactions in ways that are both contextually and environmentally sensitive. As part of that agenda, we recently conducted a study where a researcher immersed himself into a one-month backpacking trip to engage other backpackers to co-experience the nature, discuss how tech may or may not add value in it, and imagine future developments that are both experientially and societally desirable. The outcomes of such radically situated process were expectedly rich, messy, and multifaceted (as described in Section 2). To disseminate them in ways that are both inspirational and contextually grounded, we decided to craft an interactive installation so other designers and researchers could experience our data in a way that reflected the playful and situated nature of our experiment. That motivated the design of the *WildTech experience*: a playful installation that allows people to (literally) walk through the adventure lived by our researcher and immerse themselves into the data the study yielded along the way, in ways that are both informative (e.g. by showing the research outcomes of a reflection between backpackers) and inspirational (e.g. by sharing emotionally rich multimedia documentation of anecdotes lived during the hikes). Here we present our installation hoping to exhibit it at DIS 2023. We intend to use it to engage designers and researchers in conversations about our study and about the broader idea of disseminating research data in playful and situated ways.

2 A ONE-MONTH BACKPACKING STUDY

Aligning with our research aim of further advancing the design space of contextually sensitive human-nature interaction technology, our backpacking study had a dual nature: On the one hand, we sought to produce generative [9] knowledge on the influence of tech on human-nature interactions and the kinds of technology-mediated forestry experiences people may want to have access to in the future. On the other hand, we were interested in exploring nature-related co-design from a methodological perspective, to extend recent works that have explored the forest as a site for situated, bottom-up, and holistically caring design research. With those two agendas in mind, our researcher Ferran (the first author of this paper) embarked on a one-month backpacking trip where he engaged other backpackers he met along the way, co-experienced the

nature with them, and used those shared experiences as co-design material.

The trip took place along El Camino de Santiago, an internationally popular pilgrimage trail that congregates hundreds of thousands of backpackers every year. For 30 days, Ferran hiked 800+ km through which he co-experienced a broad range of landscapes. He interacted, in different depths and for varying lengths, with 200+ backpackers from 35+ nationalities. Building on prior works that highlight the messy and unpredictable nature of the forest as a co-design scenario [1, 7], Ferran avoided enforcing a rigid protocol in his co-design engagements with other backpackers, to privilege the emergence of the unexpected.

Days started early and the main event was a 20-40 km, 4-8 h hike. During the hikes, Ferran focused on co-experiencing the nature with other backpackers to then intuitively build on those lived experiences to stimulate conversations and/or ideation. He was particularly interested in discussion topics such as: the kinds of nature experiences people found fun, joyful, or otherwise stimulating; their experiences with and opinions of using tech in the nature; or their ethical and philosophical stances towards the human-nature-technology interplay; among others. Conversations flowed organically and evolved in directions traced by the group – far from guiding them too much, Ferran acted as yet another participant who occasionally dropped provocations. To draw insights from the conversations, Ferran used a range of documentation tools: short phone notes, self-made design probing tools (described in [2]), photos and videos, etc.. To avoid disrupting the group's immersive experience and conversational flow, Ferran did not store fully fleshed ideas during the hikes – rather, he created memory tokens meant to be reflexively unpacked after walking. Upon arrival to each day's destination, Ferran spent the afternoon recapping, reflecting on the events, thoughts, and ideas they represented, and articulating those reflections in a richer documentation form. To document the day's events and reflections, he used different tools, including:

1. A series of snapshot cards to store: (1) *anecdotes* from the hikes that surfaced relevant aspects of human-nature interactions; (2) inspirational design *ideas* envisioned during the hikes; (3) *reflections* around the human-nature-tech interplay; and (4) *memories* of past nature-related experiences brought up by himself or by other backpackers.
2. A notebook for documenting his own experience with and thoughts about the unfolding of the research process – that is, for storing methodological reflections on the co-design process itself.
3. A daily collection of Instagram stories (see @wildtechresearch) where he shared a curated sample of each day's insights – both design space specific and methodological. That opened up the research to non-physically present others and on occasion led to second-wave contributions, e.g. in the form of additional design ideas or anecdotes.

Such rich collection of documentation forms yielded two different types of data: On the one hand, we collected lived experiences with, design ideas for, and reflections around the human-nature-technology interplay – an analysis of which will contribute generative knowledge that can support the design of tech that supports

richer, more joyful and caring human-nature entanglements. On the other hand, we surfaced reflections around the methodological underpinnings of displacing research into the wilderness, based on Ferran's first-hand experience of the implications of co-designing from the uncertain landscape of the forest – an analysis of which might help to advance the methodological space of radically situated co-design research (in the forest and beyond). The results from those analyses will be disseminated in future papers. Here, instead, we focus on presenting an installation we designed to make our raw data accessible in a way that is both situated, interactive, and compelling. We hope our installation will open our reflection process to other designers and researchers by making those data accessible to and inspirational for them. We describe the installation in the following section.

3 AN INSTALLATION FOR "WALKING THROUGH" THE STUDY DATA

The *WildTech experience* is a playful installation that will allow DIS attendees to (literally) walk through the raw data we produced during our backpacking study (see schematic representation on Figure 1). By walking on a sensor surface, the user can control a virtual character projected on a wall that serves as a representation of our researcher. The character moves through an abstraction of the trail the researcher backpacked; all the reflections, ideas, and anecdotes that came up along the way keep appearing on the projection as the user walks on the sensor. If the user wants to dive deep into any of that information, they can use an interactive screen in front of them to consult the entirety of our study data. The screen showcases all the data that was produced each day of the backpacking trip; that is, as the user is walking through the piece of the trail the researcher walked on, e.g., day 14, the screen will showcase data from that moment of the study. The data includes: snapshot cards featuring inspirational anecdotes and memories, design ideas, and reflections on human-nature interactions; thoughts on the methodological underpinnings of co-designing from the forest; and the collection of photos and videos the researcher and his fellow nature goers produced throughout the backpacking adventure.

The installation also allows people to connect with our study in more lateral ways. First, the user can scan a QR code to sync their phone with the installation. That will turn the phone into a display of the Instagram stories produced by the researcher each day of the study: as they walk through, e.g., day 3 of the trip, the phone will automatically display the Instagram stories produced during that day. Additionally, the wall projection is surrounded by a collection of analog diegetic objects that were used or produced during the backpacking trip. For example, backpacking gear such as the shoes or the backpack; the self-made design probing tools the researcher brought with him; arts and crafts materials he used to document and ideate; the notebook where he stored his methodological reflections; examples of the snapshot cards where himself and other backpackers stored ideas and anecdotes; or photos that taken throughout the adventure; among others.

To situate the data reading experience as much as possible, we deemed it interesting to use walking as a key component of the installation. However, we acknowledge that comes at a cost regarding accessibility. To mitigate that, we developed a version of our interactive piece that can be run on any laptop or tablet and delivers the exact same information – the only difference being that the virtual character is controlled through a keyboard (on the laptop) or through screen touch (on the tablet) rather than by literally walking. To make said screen-based artifact easily available, we will make it openly accessible online and include clearly signaled QR codes for accessing it all around the installation. With that combination of an embodied and a screen-based artifact, we hope to be able to appeal to a broader audience; additionally, we hope that the digital version of our installation will allow DIS attendees to "bring the experience home" and continue to check and make inspirational use of our study data in their future nature-related projects.

All in all, our installation will allow DIS attendees to metaphorically travel with us to our adventure situated in the Spanish wilderness, and to engage with the rich and messy data that stem from that study in a way that is both compelling, situated, and inspirational. That, in turn, will allow us to facilitate rich and grounded conversations around the potential of technology to joyfully enrich human-nature interactions and, in consequence, to open our reflection process with the broader HCI and design research communities. Additionally, it will invite all of us to consider alternative, more playful and experiential forms of scientific communication – a conversation we argue we should be having more in our field.

4 INTENDED AUDIENCE, INTERACTION & CONVERSATIONS

The primary audience for our installation is designers and researchers (both in industry and academia) interested in the design space of human-nature interactions. Those working on analogous areas such as technology for outdoors settings, bodily movement, and/or more-than-human interactions might also find our installation relevant. More broadly, our work will also appeal to scholars and practitioners interested in disseminating research in ways that are compelling and situated – moving from dry, unexpressive datasets and graphs to experientially rich and situated forms of research communication.

Our aim regarding people's engagement with the installation is rather simple: we want DIS attendees to play with our system and get an experiential understanding of what our study felt like and yielded. We expect attendees to engage with our installation for a varying span of time, ranging from a few seconds to several minutes; we designed it to accommodate both modes of interaction, and to also be compelling for the surrounding audience. We intend to use people's interactions with and around the installation as a trigger for rich discussions around human-nature interaction design and research – grounded in the lived experiences, reflections, and design ideas included in the data showcased in the installation. We also hope that playing with the installation will get DIS attendees interested in the inspirational potential of our data, and that as such they will access the screen-based version of the *WildTech experience* later, when they are back in their research labs and design studios, to inspire their future work. Overall, to summarize, our aim with this piece is threefold: First, we want to make our data accessible so it can inspire others in the DIS community; Second, we want to use the installation to stimulate on-site reflection on the challenges and opportunities of human-nature interaction design and research;
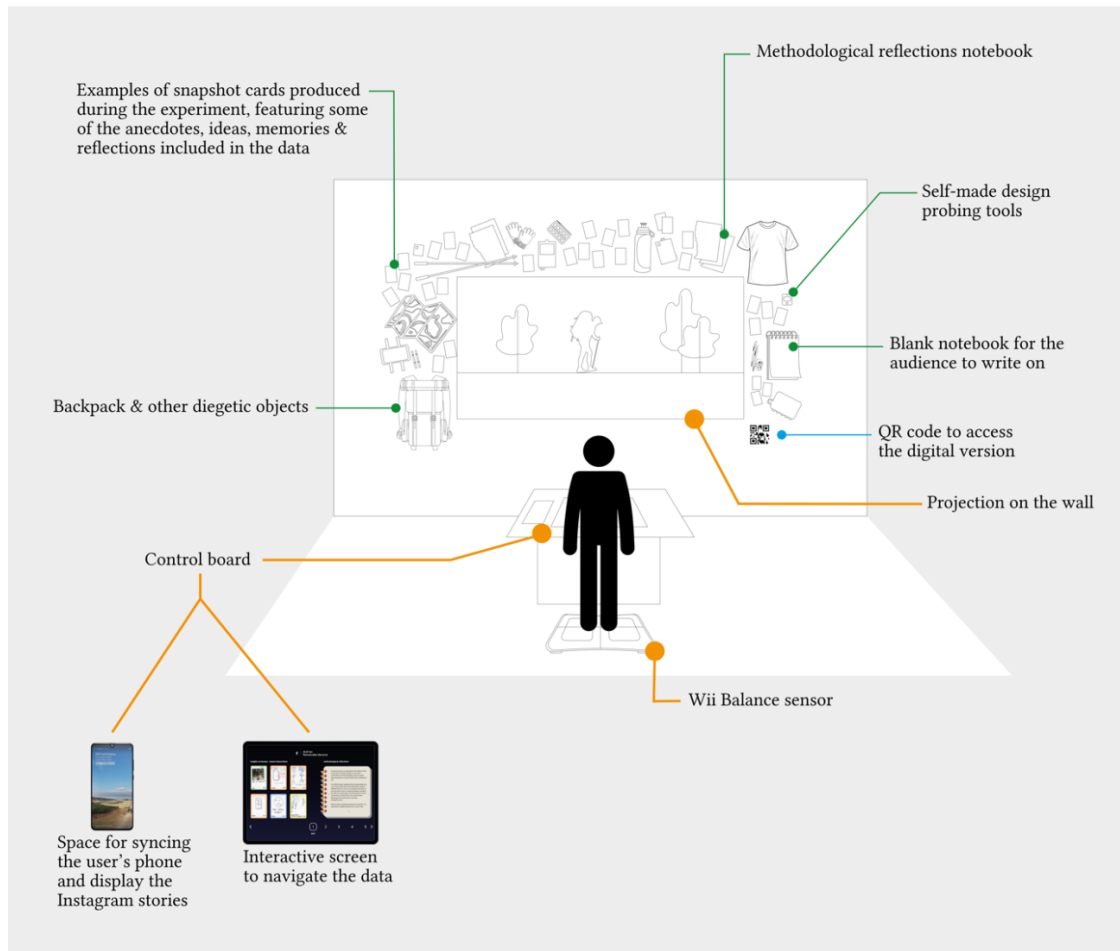
Figure 1: Schematic disposition of our installation and its parts. First, a control board including: a Wii Balance sensor that drives the wall projection, an interactive screen for navigating the study data, and a space for placing and syncing the user's phone so it displays the Instagram stories produced during the study. Then, a wall projection featuring a virtual character that moves through an abstraction of the trail where the study took place. Finally, a set of diegetic objects surrounding the wall projection, which help to situate the exhibition into the context where and the conditions in which it took place.

Third, we aim to provoke a discussion around the potential of showcasing research outcomes and data in novel formats, delivering rich experiences that are equally informative, inspirational, and fun.

5   CONCLUSION & FUTURE WORK

We present the *WildTech experience*, a playful installation that will allow DIS attendees to (literally) walk through the data produced during a situated design research study where we explored how to design technology for joyful human-nature interactions. We hope that our installation will (1) make our study data accessible so it can inspire other designers and researchers, (2) lead to on-site reflection on the challenges and opportunities of human-nature interaction design and research, and (3) stimulate a discussion on the potential of disseminating research through playful experiences. By observing how DIS attendees interact with our piece, we will

reflect on how its affordances impacted the reading of our data and will use that information to design new playable experiences to disseminate our future work.

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